Return Migrants: The Rise of New Entrepreneurs in Rural China[*]

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Abstract

This paper analyzes return migrants' self-employment decision upon their return to their home villages, by using an original rural household survey conducted in Wuwei County (Anhui province, China) in 2008. We find that return migrants are more likely to be self-employed than non-migrants, and that both return savings and the frequency of job changes during migration increase the likelihood for return migrants to become self-employed. These findings suggest that (a) return migration can help revitalize rural economies and alleviate poverty in less developed areas in China, and (b) repatriated capital is a key, stimulating factor in promoting rural entrepreneurial activities.

Keywords: Return migrants, self-employment, repatriated capital, Asia, China.

JEL classification: O15, J24, L26, O53.

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1. INTRODUCTION

China's rapid economic development and government policy changes towards higher inter-regional labor mobility have encouraged a massive rural-urban labor force exodus since the mid-1980s. The National Bureau of Statistics estimated the total number of rural migrants working in cities at about 145 million as of the end of 2009 (National Bureau of Statistics of China, 2010). Estimations also indicate that among the rural labor force, every fifth person is a rural migrant, and that about one-half of the rural population lives in households with one or more migrant workers.

The migration phenomenon in China has several peculiarities that make it specific compared to international experiences. First, it is largely an internal movement, from rural to urban areas, and given the size of the Chinese population, flows of rural migrants to cities are taking place on a massive scale. Second, the migration phenomenon itself has been shaped by strong institutional constraints, including the complex and inter-related systems of household registration (*Hukou*)[1] and rural land tenure. Most rural migrants working in cities still hold a rural Hukou, and as a consequence, they are denied access to urban social welfare, including healthcare, schooling for their children, social insurance, etc. However, their rural Hukou entitles rural migrants the right for arable land in their native villages, and as such plays the role of a safety net by "protecting them from being landless, jobless and homeless" (Huang & Zhan, 2005, p. 79). These administrative barriers to permanent settlement in cities tend to make rural migrants more likely to both maintain close ties with their village of origin and return to their home community within several years. A large part of rural migrants in China are therefore temporary migrants.

Temporary migration can take various forms depending on whether or not the migrants settle back permanently upon return. Seasonal or circular migration, with back and forth movements between rural and urban areas[2], is a somewhat well-documented phenomenon in China, with a number of studies focusing on issues such as the determinants of migration decisions (Hare 1999; Zhao 1999a,

1999b; Zhu 2002) or the impact of migrant remittances on rural development (Giles 2006; Rozelle *et al.* 1999; Taylor *et al.* 2003). As rural-urban migration itself did not occur on a large scale until the mid-1980s, return migration with permanent resettlement in home areas is a much newer phenomenon that still needs to be explored[3]. Although there is no systematic estimation of the actual number of return migrants all over China, various estimations converge towards about one-third of all migrants having returned to their home community by the end of the 1990s (Murphy, 2002; Zhao, 2002). A research project led by the Chinese Ministry of Agriculture from 1997 to 2001 indicates that return migrants represent about 6.3% of the whole rural labor force and 28.5% of the total migrant population (Gao & Jia, 2007). It also highlights an increasing trend to return, especially after the mid-1990s.

As pointed out by Laczko (2005), research on internal migration and its impact on the development of source communities has somewhat been eclipsed by the twin debate on international migration. Nonetheless, following the renewed interest on this issue fostered by the New Economics of Labor Migration (NELM) literature (e.g. Stark & Bloom, 1985), there is a mounting agreement on the channels through which internal migration can actually contribute to rural development. Migration can be viewed as a strategy for rural households to diversify income sources so as to reduce income variability (Ellis, 1998). In this context, remittances sent by migrants to their rural families are expected to help secure income and alleviate poverty in rural areas. As for China, Du *et al.* (2005) find that having a migrant increases a household's income per capita by 8.5-13.1%. However, the overall impact on poverty is found to be modest because the poorest people do not migrate. Moreover, the effect of migration on asset accumulation and on the development of source communities eventually depends on how remittances are used (De Brauw & Rozelle, 2008). For the specific case of China, evidence is mixed. On the one hand, Taylor *et al.* (2003) find mild evidence that households invest remittances in self-employed activities. On the other hand, Huang and Zhan (2005) argue that remittances are used more for consumption than for investment and as a consequence, they can only be expected to have a short-term impact on poverty reduction[4].

Another channel through which migration can influence rural development is return migration. Recent literature on international migration focusing on migrants' occupational changes upon return has highlighted the propensity of returnees to become self-employed upon return (e.g. Dustmann &

Kirchkamp, 2002; Ilahi, 1999; Martin & Radu, 2009; McCormick & Wahba, 2001; Mesnard, 2004; Piracha & Vadean, 2010; Wahba & Zenou, 2009). With a working experience outside their original hometown, return migrants are indeed likely to bring back accumulated human, social and financial capital that can enable them to start their own businesses upon return, and benefit their village of origin. As mentioned above, research on return migration in China remains limited despite a mounting interest on the issue. A few empirical papers have studied the causes and consequences of return migration on individual datasets primarily collected at the end of the 1990s[5]. Regarding the impact of return migration, Murphy (2002) highlights the contribution of migration working experience to returnees' business establishments in two counties in the Jiangxi province. She finds that longer urban sojourns enable migrants not only to accumulate funds and gain management experience, but also to forge business contacts in the cities. Zhao (2002) also finds that return migrants invest twice more in productive farm assets as compared to non-migrants but she finds no evidence of returnees being more likely to participate in non-farm work than non-migrants. Closer to our research objective, Ma (2001) uses data collected in 1997 from 13 rural counties in nine provinces and highlights the fundamental role of migration experience in return migrants' occupational changes after return. In particular, he shows that the improvement of skills and abilities through migration facilitates occupational mobility toward non-farm employment upon return. In a second paper, Ma (2002) finds that skilled returnees are more prone to and successful at mobilizing local social capital upon return, thus promoting their entrepreneurial activity.

In the context of a soaring rural-urban income gap, understanding the role of return migrants on their region of origin holds importance for rural development policy in China. As entrepreneurial activity is generally considered a key component in the development process, one way to assess this role is to study occupational mobility upon return. Yet, as mentioned above, not much research has been dedicated to studying the impact of migration on taking entrepreneurial activity in source communities in China. This paper attempts to fill this gap by analyzing such an impact in the context of Wuwei County (Anhui province), a pioneering county in the process of migration. The county is characterized by both a long history of labor export and the development of numerous entrepreneurial activities by return migrants. The migration pattern there closely follows the main trends of internal migration in

the country as a whole (Dou, 2001). Female migrants working as domestic servants at the beginning of the 1980s were the pioneers who paved the way for the subsequent large-scale migration[6]. From 1985 onward, out-migration involved a larger portion of the county's population, with migrants taking up jobs in construction and in the production of pressed salted duck (the so-called *Wuwei banya*). In the 1990s, the labor exodus gained momentum, covering a broader range of sectors, such as textile, driving, repairs, food processing, construction and other service industries, and in a broader range of destinations, including Shanghai, Beijing, Jiangsu and Zhejiang provinces. According to local official statistics, at the end of 2006, about 43% of the entire rural labor force of the county was working outside the county (Wuwei County Government report, 2007). Moreover, the county is not only renowned for sending out rural migrants, but also for actively encouraging migrants to return. In particular, the county-level government launched a policy in 1996 with the explicit purpose of attracting local out-migrants to return and to invest in their hometown[7]. This policy, which literally translates into "phoenixes return to their nest," (*feng huan chao*) is reported to have successfully attracted return migrants (Gao, 2001; Zhao, 2002)[8]. By the end of 2008, 16,200 return migrants had set up 1,113 enterprises and 6,199 individual enterprises, which accounted respectively for 38.1% of total enterprises and 33.8% of total individual enterprises in the area (Wuwei County Government report, 2009).

The purpose of this paper is to examine the impact of migration experience on individuals' choice of being self-employed in Wuwei County. To do so, we consider two levels of analysis. We start with a comparison between non-migrants and return migrants[9] and address the following question: when compared to their rural counterparts, are return migrants more likely to opt for self-employment upon return? We then turn to the analysis of the benefits that returnees themselves gain from their own migration history[10], and examine how past migration experience affects return migrants' choice of self-employment upon return.

The paper contributes to an emergent body of literature focusing on China's urban-rural return migrant flows and their impact on rural development in at least three ways. First, by using data from a recent and original rural household survey conducted in Wuwei County in 2008, we provide an updated and novel assessment of return migrants' choice of self-employment in rural China. As

highlighted above, most papers use data from the end of the 1990s. This trait drastically limits the scope of such analyses since return migration has sharply increased over the 2000s. Moreover, the dataset used in this paper covers a region not only temporally but also spatially distinct. Given the size of China, geographically focused and thorough studies can bring informative and useful insights as to how return migration may affect the development of sending communities. As highlighted above, the choice of Wuwei County has been dictated by the emigration history of the county, as well as by its recent attraction of return migration. By specifically focusing on this county, we intend to contribute to a better understanding of migrants' self-employment motivations upon return.

Another contribution of this paper is that it brings together two strands of the empirical literature on the impact of migration on entrepreneurial activity in source communities. The first one examines the differences in the probability of being self-employed between return migrants and non-migrants. The second approach consists in focusing on return migrants and analyzing the role of their migration experience on their decision to enter entrepreneurship. While both approaches have been separately adopted in migration studies on China, no paper has yet combined these approaches in order to assess the specific role of return migrants and their migration experience in entrepreneurship development in rural China[11].

Last, our estimations not only corroborate some of the results found in the existing literature but also enrich the understanding of the conditions for stimulating rural development. To briefly summarize the key findings, return migrants are found to be more likely to opt for self-employment than non-migrants, and their assets in the form of savings and migration experience are found to play a prominent role in this choice.

The remainder of the paper is structured as follows. Section 2 presents a stylized framework for the empirical part by briefly reviewing the available theory on entrepreneurship and its relationship to return migration. Section 3 describes the data set used in the statistical analysis and provides descriptive statistics on occupational distribution. Section 4 examines the differences in self-employment choice between non-migrants and return migrants. Section 5 investigates the role of migration experience in the participation of return migrants in self-employment. Concluding remarks are given in the final section.

2. RETURN MIGRATION AND ENTREPRENEURSHIP: THEORETICAL CONSIDERATIONS

What are the main factors that drive the decision of an individual to participate in self-employment? How can (return) migration foster entrepreneurship in the communities of origin? This section briefly reviews the theoretical background of entrepreneurship decision, and discusses the relationship between migration and the key determinants of self-employment. This short review will set the conceptual framework for the specification of the empirical models tested thereafter.

The economics of entrepreneurship considers the decision to enter entrepreneurship as an individual occupational choice, which is based on the comparison of expected payoffs between becoming an entrepreneur or a wage-worker (Kihlstrom & Laffont, 1979; Evans & Leighton, 1989; Evans & Jovanovic, 1989; Fonseca *et al.*, 2001). Within this framework, individuals undertake self-employment if their expected utility from self-employment is higher, and wage work otherwise. Individual choices then depend on the factors that affect the utilities in either occupation.

The existing theoretical and empirical literature on participation in self-employment identifies a series of factors that generally includes individual traits such as entrepreneurial abilities, risk-aversion and human capital (Kihlstrom & Laffont, 1979; Lucas, 1978; Schultz, 1990, Evans & Jovanovic, 1989; Rees & Shah, 1986), family (or parental) characteristics (Mohapatra *et al.*, 2007; Wahba & Zenou, 2009), institutional factors such as access to credit and liquidity constraint (Blanchflower & Oswald, 1998; Evans & Leighton, 1989), and factors related to local labor market conditions (Haile, 2008). All of these approaches lay the foundation for understanding the behavior of entrepreneurs in general.

Regarding the role of migration experience in choosing entrepreneurship, there is a growing, although still small, body of literature that focuses on the occupational choice of migrants upon return and on the determinants of their subsequent entrepreneurial activities (Dustmann & Kirchkamp, 2002; Ilahi, 1999; McCormick & Wahba, 2001; Mesnard, 2004; Piracha & Vadean, 2010; Wahha & Zenou, 2009; Woodruff & Zenteno, 2007). Since return migration primarily takes place in developing countries, the main focus concentrates on thinking of the migration experience as a solution to obstacles to entrepreneurship in countries that often lack the institutional and economic environments

conducive to the development of such activities. Concerning the broad categories of factors listed above, migration experience may enhance human and physical capital, and thus enable individuals to set up their own businesses upon return, despite poor initial personal endowments and/or imperfect credit markets.

In the theoretical framework of migration studies, migration is considered part of a lifetime utility maximization plan with given budget and liquidity constraints (Djajic & Milbourne, 1988; Galor & Stark, 1990; Dustmann, 1995). Following Borjas and Bratsberg (1996), return migration is usually viewed as "part of an optimal residential location place over the life cycle" (p.165), and as a consequence, migration itself is a short-term phenomenon used as a means of promotion after return. The underlying idea of the approach is that people decide to migrate in order to accumulate a sufficiently large amount of capital of any sort (skills, human capital, experience, savings, etc.) that will enable them to start new higher-level activities after return. Within this framework, the selection process is "positive" because migrants who return have actually decided to (migrate and) return as a lifetime plan, and they take advantage of their migration experience to move to better jobs after return. Furthermore, in models of temporary migration, the optimal migration duration and the occupational choice after return are supposed to be simultaneous: the decision to become self-employed upon return is made at the same time as the decision to migrate and return.

In countries where access to credit is a major obstacle for entrepreneurship, how individuals solve the liquidity constraint is a key issue (Wahba & Zenou, 2009)[12]. One strategy is temporary labor migration to accumulate capital for initiating enterprises upon return, as set in the life cycle assumption theory (Dustmann & Kirchkamp, 2002; Mesnard, 2004). As argued by McCormick and Wahba (2001), "individuals who have made higher total savings whilst overseas are more likely to become entrepreneurs on return since for them the opportunity costs of capital is less than for those who either must borrow in local capital markets or are liquidity constrained" (pp. 172-173). Hence, individuals who aim to become self-employed will also decide on the amount of savings to accumulate in order to set up their businesses after return. As a consequence, they can be expected to save more during migration[13], and a positive relationship between repatriated savings and entrepreneurship activities upon return should be observed. Using Tunisian data, Mesnard (2004) finds evidence that

high savings brought back from migration positively influence the choice to become an entrepreneur after return. The positive impact of accumulated savings on the decision to become self-employed is also highlighted in case studies of other countries (Ilahi, 1999; Piracha & Vadean, 2010).

In terms of entrepreneurial ability, migration experience can also be viewed as a tool to accelerate the process of ability enhancement through learning, in the vein of the human capital approach to entrepreneurship pioneered by T. W. Schultz. Schultz (1980) defines entrepreneurship as the ability to deal with disequilibria (by "making decisions that are neither routine nor repetitive", p. 442) rather than the ability to bear risk (since people who are not entrepreneurs also have to deal with uncertainty). In this regard, he argues that "experience, education and health enhance entrepreneurial ability" (p. 448). As documented by Ma (2001), such enhancement can be acquired through migration. Indeed, "the migrant who adopts a labor-force-experience approach has to break routines frequently, when searching for and evaluating opportunities, making and implementing decisions, changing and adjusting to new positions, learning and perfecting skills, and understanding firm organization and the economic system" (p. 241). Using Chinese data collected in 1997, he validates the assertion that human capital accumulated during migration is fundamental to occupational change.

In a more integrated approach, Wahba and Zenou (2009) develop a search model in which return migrants face a trade-off between human and financial capital accumulation during migration on the one hand, and a simultaneous potential loss of their original social capital due to loosening contacts whilst overseas on the other hand. Using data from the Egyptian labor market, they show that return migrants are more likely to start entrepreneurial activities than non-migrants. They test the various relationships involved and provide strong evidence of the positive impact of both financial capital and human capital accumulation through migration in self-employment choice. They also find that social networks have a significant influence on non-migrants to become entrepreneurs, but no significant impact on return migrants. One explanation is that the accumulation of human and physical capital compensates to some extent for the loss of social networks for return migrants.

This brief review suggests that both theoretical predictions and empirical evidence converge to emphasize the high propensity of return migrants to become entrepreneurs after return, as well as the important role of migration experience through repatriated capital and/or enhanced entrepreneurial

abilities in leading return migrants to become entrepreneurs. In this paper, we propose a test of these two hypotheses in the case of Wuwei County, adopting two complementary empirical approaches that are detailed below.

3. DATA AND DESCRIPTIVE STATISTICS ON SELF-EMPLOYMENT

(a) *Household survey in Wuwei*

The data used in this paper comes from a series of interviews of rural households, conducted in Wuwei County in Anhui province from September to November 2008 (hereafter named "Wuwei 2008 Survey")[14]. The county is located in the middle of Anhui province and on the north side of Yangtze River, neighboring the second largest city of the province, Wuhu, 116 kilometers away from the capital city of Hefei. As mentioned above, Wuwei County was selected because of both its relatively long labor force export history, and its active policy to encourage return migration. Four towns were chosen for the survey: Gaogou, Liudu, Dougou and Tanggou. Approximately three administrative villages in each town and 20 households in each village were randomly selected. A total of 239 households were interviewed, providing information on 969 individuals.

The data was collected in the form of a questionnaire, consisting of a series of questions about both family, and individual family members. Individual information includes personal characteristics (e.g., age, sex, education, etc.), working position and income. The work experience during and after migration for those with a migration and/or return history was also recorded. At the household level, the primary information includes the values of productive assets and yearly incomes. A separate administrative village survey was also conducted in each village to collect information about the general economic, geographic as well as demographic conditions in the locality.

The sample used in this paper is composed of 384 working individuals currently living in the villages. Since our focus is on occupational choice for the working population, the sample is limited to individuals aged 17 to 70, who declared working at least part of the year[15]. For the purpose of this study, we consider two groups of workers: non-migrants and return migrants. Non-migrants are those

who have no working experience or working experience of less than six months outside of Wuwei County. Return migrants are individuals currently settled and working in the county, who have at least six months migration working experience outside the county. Out of the 384 individuals in the working labor force, 298 (78%) are non-migrants and 86 (22%) return migrants[16]. Self-employed individuals are identified as people who are either own-account workers (with no employees) or individual entrepreneurs (with paid employees)[17].

(b) *Data description*

Table 1 presents summary statistics on individual and household characteristics as well as on occupational distribution by migration status. As expected, there is a clear gap in human capital characteristics between non-migrants and return migrants[18]. Non-migrants are more than seven years older than returnees, and they are much less educated[19]: the proportion of non-migrants who have received no formal education is 44% while that of returnees is 27%. With regard to household characteristics, an interesting feature is that the average land endowment per person is significantly lower for return migrants who have only 0.72 *mu*[20] per person, as compared to 1.07 for non-migrants. Since there is no significant difference in household size between returnees and non-migrants, the smaller per capita land endowment of returnees probably reflects land shortage rather than labor surplus in returnees' households[21]. It can also be interpreted either as a cause or a consequence of a higher propensity of returnees to engage in off-farm activities.

Table 1 here

Interestingly, Table 1 also exhibits important differences in occupational participation between non-migrants and return migrants. For non-migrants, participation in farm labor (50%) is significantly higher than in any other occupation, while for return migrants, self-employment is by far the top occupation with 44% of returnees engaged in self-employment; the proportion of returnees engaged in farm labor and in skilled work are respectively 22% and 20%[22]. A comparison of occupational distribution across the two groups shows that return migrants are significantly more engaged in self-employment than non-migrants.

More specifically, with regard to self-employment, return migrants and non-migrants exhibit

fairly similar patterns in terms of both business scale and business sector. Although not reported here, our data shows that businesses established in Wuwei County are generally of a small family scale: the majority of return migrant self-employment activities involve no non-family employees (72%), and the proportion is even larger for non-migrants (86%). The general observation of small-sized rural businesses is consistent with Zhang *et al.* (2006) who find an average number of workers per self-employed enterprise in rural China of only 2.3[23]. They also show that approximately 60% of the enterprises are operated by only one person. Regarding business sectors, our data indicates that a quarter of self-employed return migrants are engaged in farming-related activities, such as large-scale aquatic production (crabs, fish, and pearls), and greenhouse vegetable cultivation. Retail business such as small village groceries and a variety of individual vendors, and manufacturing activities like brick-making, glue-making, and raincoat production come respectively second and third. Though there are slight differences in proportions, the distribution patterns among non-migrants and among return migrants are fairly close to each other.

4. RETURN MIGRATION AND SELF-EMPLOYMENT: A COMPARISON WITH NON-MIGRANTS

To analyze the impact of return migration on occupational choice, we first try to isolate the specific effect of being a returnee on the decision to become self-employed, as opposed to undertaking farm work or wage work in the village. Table 2 provides descriptive statistics by both migration status and occupational group for individuals working in rural areas. A comparison by occupation shows that younger, more educated and married male individuals tend to engage in self-employed activities[24]. As compared to farm work or wage work, self-employment is also clearly undertaken by heads of household, in smaller households (with more children of school-age, less female working adults and less old members), with a smaller endowment in arable land. Moreover, the self-employed are more likely to have a much higher household income (in 2007). Finally, a comparison by migration status shows that self-employed return migrants are on average younger and much more educated than

self-employed non-migrants.

Table 2 here

(a) *Empirical approach*

The underlying econometric specification used to estimate the determinants of the decision to engage in self-employment can be briefly described as follows. The latent individual's utility from self-employment (y_i^*) can be expressed as follows:

$$y_i^* = \beta_0 + X_i\beta + R_i\gamma + \varepsilon_i \quad (1)$$

where X_i is a set of explanatory variables, R_i a dummy variable for return migrants, and ε_i a random normally distributed residual (Probit model). The actual decision to be self-employed (y_i) is such that:

$$y_i = \begin{cases} 1 & if \quad y_i^* > 0 \\ 0 & otherwise \end{cases} \quad (2)$$

The vector X_i includes various individual, family and village characteristics that aim at capturing some of the theoretical channels presented in Section 2. Personal characteristics include age, gender, marital status, and education. Family labor resources are accounted for through two sets of variables that are introduced separately. First, the size of household is introduced in a baseline regression (Model 1). Second, considering the potential correlation between household size and household composition, we introduce separately the household composition (Model 2) that enables us to distinguish dependent members (children below the age of six and adults above the age of 70) from working members (by gender). Household assets are measured by both land endowment per person and the household income for the year 2007. This latter variable is introduced in a separate regression (Model 3) since it slightly reduces the sample size. Three township dummies are also used to control for location differences.

In this simple Probit model, the "returnee" dummy variable R_i is treated as fully exogenous. It enters the right-hand side explanatory variables to account for the fact that migration experience may influence occupational decision upon return, and as discussed above, it is expected to have a positive impact on self-employment participation. However, under the rationale is that return migrants are a

self-selected group with regard to unobservable characteristics such as motivation or risk aversion, one may wish to allow return migration to be endogenous to self-employment decision. Indeed, these unobservable characteristics may at least partly explain that return migrants are less risk-averse than non-migrants and therefore also more likely to be self-employed. If unobservable heterogeneity has a direct influence on both decisions, to migrate (and return) as well as to set up businesses, then the return migration variable will be correlated with the error term ε_i, which will make it effectively endogenous in the selected sample. As suggested by Greene (1998, 2008), this unobservable heterogeneity can be captured by using a recursive bivariate Probit model[25].

Estimating a recursive bivariate Probit model requires the estimation of the return migration decision together with the self-employment decision. The decision to migrate and return can be described in a similar way:

$$R_i^* = \alpha_0 + Z_i\alpha + \mu_i \qquad (3)$$

where R_i^* is the latent variable associated to the return decision, with $R_i = 1$ if $R_i^* > 0$ and $R_i = 0$ otherwise, Z_i is a set of individual and household characteristics that may influence the decision to return, and μ_i a random normally distributed residual. In a recursive bivariate Probit model, the two decisions, on entrepreneurship and return migration are treated as interdependent, with $\text{cov}(\varepsilon_i, \mu_i) = \rho$.

Although no exclusion restrictions are theoretically needed to achieve identification of the model parameters (Wilde, 2000), Monfardini and Radice (2008) advocate the use of instruments to help in obtaining results more robust to distributional misspecification. As pointed out by Taylor *et al.* (2003), migration networks have been shown to be important drivers for individual migration decision. In communities with a history of migration, information about potential jobs in cities or costs can be shared so that it reduces out-migration related costs or uncertainties (Massey, 1990; Piracha & Vadean, 2010; Wahha & Zenou 2009). In a similar vein, we may assume that networks and home villages' histories in terms of attracting back return migrants can also influence return migration, and that the current return migration flow is a function of past return migration patterns. Following Wahha and Zenou (2009), who use the share of adult male migrants in the total adult male population in an

individual's original community as an instrument for the identification of return migration decision, we use the share of migrants or return migrants (dropping the observed individual) in the village as a proxy for a networking effect or a culture of migration. We expect that such networks have an influence on the (return) migration decision and are not correlated with the error term in the individual occupational decision, so that they can be used as an identification variable. The introduction of this network proxy in the occupational choice equation provides a non-significant coefficient, which enables us to use it to identify our model (Coulon and Piracha, 2005)[26].

(b) *Estimation results*

Both simple Probit models that do not allow for selection on unobservable characteristics and recursive bivariate Probit models that capture the potential endogeneity of return migration decision in self-employment choice, are estimated and presented respectively in Table 3 and Table 4. As shown in Table 4, we do not find evidence of any strong endogeneity problem for the decision to be self-employed. The Wald statistic indicates that we cannot reject the hypothesis that ρ equals zero[27]. Following Greene (2008), one may argue that this result is not as counterintuitive as it seems. Indeed, the return migration decision and the self-employment choice are probably correlated, but what the correlation coefficient measures here is "(roughly) the correlation between the outcomes after the influence of the included factors is accounted for" (Greene, 2008, p. 825).

Table 3 here

Table 4 here

Tables 3 and 4 all indicate that return migrants are more likely to engage in self-employment than non-migrants. Moreover, for individual as well as family characteristics, the estimated coefficients are consistent with the predictions of the standard human capital model. Consistent with a life-cycle hypothesis, the effect of age is found to be non-linear: the probability of becoming an entrepreneur increases with age up to a threshold level of 40 to 42 years old. Compared to young people, middle-aged people are more likely to have accumulated both financial capital and human capital, such as management skills or the social networks necessary to become an entrepreneur. However, above a certain age, older people are also usually more averse to risk, and this higher risk aversion

reduces their probability to set up new businesses, other things being equal. We also find that men are more likely to be self-employed than women. With regard to marital status, our estimations show that married people are more likely to engage in self-employment when the size of household is introduced, but the result does not hold with household composition. Additional specifications (not reported here) also indicate that marriage might bear differently on the employment outcome of men and women since the interaction between marital status and gender alone is significant and positive (but gender becomes insignificant when entered with the interaction term). These findings may indicate that marriage positively influences the involvement of men in self-employment *via* intra-family work-sharing. Such interpretation is consistent with the findings of Zhang et *al.* (2006) who highlight the high proportion of married entrepreneurs rather than single individuals as a distinctive characteristic of self-employment in rural China.

Regarding the impact of household assets and resources, the shortage of land at the family level is found to act as a constraint that pushes people out of agriculture into off-farm activities, and thus increases the individual's probability to become self-employed. Moreover, a comparison of the different specifications reveals some interesting household resource effects on individual self-employment establishment. First, the impact of household size is significantly negative, indicating that self-employment is more likely to occur in smaller households. Regarding household composition, individuals are likely to engage in self-employment when there are fewer female working adults and fewer older family members. Finally, the level of household income in 2007 has a significantly positive impact on individual's choice of self-employment, indicating that self-employed individuals are more likely to come from households with better economic conditions.

Last, two of the three township dummy variables are significant and negative, which implies that compared to the reference township (Liudu) and other things being equal, people living in these two townships are less likely to engage into self-employment. Since Liudu is the poorest township in our sample, entering self-employment in this township may be viewed as a strategy to escape the disadvantages of an unfavorable economic environment and the absence of wage work opportunities.

5. MIGRATION EXPERIENCE AND SELF-EMPLOYMENT DECISION UPON RETURN

The above Probit estimations support the hypothesis that return migrants are more likely to be self-employed compared to their rural counterparts. There are a number of explanations for the higher propensity of return migrants to be self-employed that deserve further exploration. First, return migrants may be a selected group of individuals who originally participated more in self-employment, meaning that their present occupation would also depend on their pre-migration occupation. However, a quick look at a transition matrix on both pre-migration and post-return occupational composition for return migrants does not reveal any systematic link between present and past occupations of returnees. In particular, Table 5 shows that before migration, 51% of individuals were in farm labor and 26% had no job (they were students, homemakers or waiting for a job). After return, we observe a sharp decrease in farm labor participation compensated by a significant increase in self-employment as well as in wage work. Among the self-employed, the vast majority was either farm laborers or unemployed, and only three were already self-employed before migration. Arif and Irfan (1997) found similar patterns in Pakistan, with a high tendency of occupational shifts of return migrants between pre-migration and post-return, particularly toward independent activities.

Table 5 here

Another explanation for the high propensity of self-employment participation as well as other occupational changes after return can be related to migration working experience. Stylized facts on returnees' migration experiences profiled by occupation status upon return corroborate this hypothesis. As depicted in Table 6, differences in migration experience between self-employed returnees and non self-employed returnees all suggest a potential relationship between migration experience, measured in terms of length of stay, accumulated working experience or accumulated savings, and occupational choice toward self-employment after return. First, returnees who became self-employed after return were on average more than three years younger when they left their home village than those who took another job. Consistent with much longer average migration durations for the former group (7.55 years *versus* 5.60 years)[28], the age gap reduced to less than two years upon return. As a matter of fact, 42% of returnees who became self-employed after return had accumulated more than eight years of

migration experience, whereas only 21% of non self-employed had such a long migration experience. Interestingly, self-employed returnees have also experienced much more frequent changes in both jobs and working cities during migration, and they have repatriated two times more savings on average (16,263 yuan *versus* 8,548 yuan)[29]. Finally, Table 6 also displays the occupational distribution of return migrants in their last urban jobs. It indicates that before return, the majority were wage-workers: 35% were manual workers, 39% were skilled workers, and only 26% were self-employed[30]. A comparison of the distributions across self-employed and non self-employed return migrants reveals some interesting additional features. While there is no significant difference in the proportion involved in self-employment before return, self-employed return migrants were significantly more likely to be skilled workers, but less likely to be manual workers than non self-employed return migrants (49% vs. 32% and 22% vs. 45%).

Table 6 here

(a) *Empirical strategy*

In this section, we propose to formally test the impact of migration experience on self-employment decision upon return, by estimating the determinants of return migrants' choice toward self-employment. For this purpose, we further restrict our sample to return migrants only and use a bivariate Probit model similar to the one presented in Section 4. We also introduce explanatory variables that account for both migration experience and post-return experience together with a series of individual and household socio-economic characteristics. As highlighted in Section 2, migration experience through repatriated capital and/or enhanced entrepreneurial abilities may be expected to influence occupational decisions in favor of self-employment. For the empirical test of these hypotheses, we measure financial capital accumulated during migration through the total family members' repatriated savings upon return[31]. As for human capital or experience accumulated during migration, we use two proxies to account for urban job experience. The first one measures the frequency of job changes during the whole process of migration[32], and the second one takes a value of one if the return migrant has ever worked in a big city[33].

Moreover, as also mentioned in Section 2, in models of temporary migration, return savings are

considered as inherently related to migrants' return life-time plans. From a statistical point of view, it implies that repatriated savings must be considered as a potentially endogenous variable in the estimation of the return migrants' occupational choice model[34] (Ilahi, 1999; Mesnard, 2004; McCormick & Wahba, 2001). A key issue is to find valid instruments, i.e. variables that should affect repatriated savings, but the choice of activity upon return only via repatriated savings. Following previous empirical works, we consider three different instrumental variables to correct for the possible sources of endogeneity: *i*) "age at first migration"; *ii*) "squared age at first migration"; and *iii*) "reasons for the choice of the first migration destination". There are at least two rationales for using age at first migration as an instrument. First, as argued by Dustmann and Kirchkamp (2002), while "variables which are determined during or after the migration period may be affected by activity choice or/and duration", it should not be the case of "characteristics before migration" (p. 363). Second, one feature of internal migration in China is that young migrants are usually employed in tough and demanding jobs, which enables them to earn more money (with a longer working time) in compensation to difficult tasks. But older migrants tend to be less employable in such positions and are given menial occupations that pay much less. In this respect, the age during the first migration may determine the capacity of migrants to save more, everything else being constant. The last instrumental variable is a binary variable which is set to equal one if the choice of the first migration destination is primarily due to a social network reason, such as migrating with family members, relatives, friends or joining them in destination areas. The rationale for introducing this instrumental variable is inspired by the work of Bauer and Gang (2002), who highlight the positive effect of social networks on migrant wages in the migration destination.

Probit estimates using a maximum likelihood estimator to account for the potential endogeneity of repatriated savings are presented in Table 7 together with standard Probit estimates. The validity of the instruments is tested using the Amemiya-Lee-Newey overidentification test (Baum *et al.*, 2006). As the null hypothesis that the instruments are uncorrelated with the error term and correctly excluded from the outcome equation is not rejected (p=0.98 for Model 1 and p=0.90 for Model 2), these instruments can be accepted as being valid in our specification[35]. Next, the Wald test of the null hypothesis of exogeneity is not rejected at the 1% level. Hence, a standard Probit regression is

appropriate to estimate the magnitude of the savings effect[36].

(b) *Estimation results*

By holding all other variables constant, our estimation results show that migration experience does significantly influence the choice in favor of self-employment among return migrants. Both repatriated savings and the frequency of job changes are found to significantly increase the return migrants' participation in self-employment, whereas working experience in a big city does not appear significant. The importance of financial accumulation during migration can be illustrated by calculating the predicted probability of being self-employed at different levels of repatriated savings, holding all other variables in the model at their means. For example, an increase of return savings by one standard deviation, which corresponds to more than doubling the savings brought back by an average return migrant, would lead to an increase in the predicted probability from 41.7% to 64.2% (using Model 1). As compared to the observed frequency of the self-employed among return migrants, this effect would represent a fairly big increase of 45%. The finding that the probability to be self-employed increases with the amount of repatriated savings supports the idea that financial capability is a key element in the establishment of self-employed activities. This result is consistent with empirical findings on the key role of accumulated savings in self-employment choices among return (international) migrants for other countries, such as Pakistan (Ilahi, 1999), Tunisia (Mesnard, 2004) and Albania (Piracha & Vadean, 2010). This finding is also in line with the comprehensive study on self-employment in rural China provided by Mohapatra *et al.* (2007), which gives support to the hypothesis that greater personal wealth eases the self-employment decision by relaxing financial constraints[37]. As highlighted by Zhang *et al*. (2006), people in rural China face underdeveloped capital markets, and credit constraints are strong enough to prevent them from starting up businesses without personal financial assets. For illustration, self-employed firms in rural China barely acquire assets through debt and liabilities, which represents only 12% of their total assets.

Table 7 here

Our estimations also show that a higher frequency of job changes during migration increases the probability to be self-employed after return. Various complementary explanations can be put forward

depending on the voluntary or involuntary nature of such job mobility. In our dataset, a further look at the main reasons for job changes indicates that return migrants' job changes during migration are more likely to be of an involuntary nature, since more than 70% are either due to 'work push' reasons (such as low wages, the difficulty of the job, the end of the labor contract, being dismissed, etc.), or to health or family reasons. In the case of involuntary job mobility, a higher frequency of job changes may indicate greater job insecurity during migration, which may at least partly explain why migrants would like to choose to return and establish their own businesses at home. This explanation falls in line with Evans and Leighton's (1989) finding that men are more likely to enter self-employment when they have changed jobs frequently. On the other hand, facing a higher frequency of job changes that entails different jobs or different occupations may result in the acquisition of a richer and a broader working experience. Hence, the positive influence of job changes may at least suggest a relatively important role of such "general human capital" accumulated through different working experiences on the decision to participate in self-employment activities.

6. CONCLUSION

Using original data from a household survey carried out in Wuwei County (Anhui province, China) in late 2008, this paper examines the impact of migration experience on individuals' choice of being self-employed in rural return areas. Two complementary angles are considered in the analysis. We first propose a comparative analysis between rural non-migrants and return migrants. We then examine the role of an individual's migration experience in self-employment choice upon return.

Key findings can be summarized as follows. The comparative analysis with non-migrants shows that return migrants are more likely to be self-employed than their rural counterparts. The higher propensity of return migrants to be self-employed is an internationally documented phenomenon, and our analysis confirms that the Chinese rural area under study is no exception. In the vein of entrepreneurship models, this finding suggests that through migration, return migrants have accumulated various forms of capital that increase their likelihood to become self-employed.

Entrepreneurship is generally recognized as a key component in the development process while at

the same time a scarce resource in economically disadvantaged rural areas where it is most needed (Ma, 2001). As a consequence, the observed higher participation of returnees into self-employment may be of importance in terms of potential for rural development. Using a 20-year labor market dataset, Mohapatra *et al.* (2007) find that in Chinese rural areas, self-employment is a sign of development. Self-employed individuals are found to perform better than wage earners in rural China, and self-employed firms are found to be profitable despite their relatively small-scale (Zhang *et al.*, 2006). Our own evidence of higher entrepreneurship among returnees supports the view of self-employment as a positive choice against the traditional Harris-Todaro view of informal jobs arising from a negative selection.

Second, the analysis of the determinants of return migrants' self-employment decisions highlights the positive impact of both repatriated savings and the frequency of job changes during migration on this decision. These findings are consistent with the general view that migration experience is a process of human and financial capital accumulation, and that the preference of returnees for self-employment "is a rational response to the opportunities and constraints during migration and upon return" (Ilahi, 1999). In particular, by confirming the prominent role of repatriated savings in return migrants' occupational choice toward self-employment, our results corroborate the theoretical predictions and empirical findings on international migration that have been discussed above.

From a local development perspective, our findings highlight the potential role that migrants can play in stimulating forces of rural development through their accumulated experience and financial capital during migration. Hence, creating a favorable business environment, including simplified administrative formalities to encourage migrants to invest in source regions by repatriating their financial capital, is certainly a key policy issue. On the other hand, our findings on the role played by repatriated savings also highlight the difficulty for rural people to overcome credit constraints that hinder the start of small-scale businesses. Anecdotal evidence from face-to-face interviews conducted during the survey further supports this hypothesis. Indeed, from these interviews, financial constraint appeared to be the primary issue for both non-migrants and return migrants who want to engage in self-employment activities. Therefore, further efforts are needed in order to give local people a better access to credit to support the establishment and the development of small-scale businesses.

NOTES

[1] The household registration system, established in 1958, imposes that every Chinese citizen is registered according to her place of residence (rural *versus* urban) and occupation (agricultural *versus* non-agricultural). It is a "de facto internal passport system" (Knight & Song, 2005) that confers different legal rights to residents. In villages, residents are given rights to land for farming and housing while in cities, residents are given rights to a package of social benefits and access to urban jobs.

[2] The usual return period for rural migrants in China is the Chinese New Year break during which rural migrants return to their hometown for a short stay before leaving again.

[3] A few papers have studied return migration and its impact on sending communities, mostly with data collected on specific areas at the end of the 1990s. See Hare (1999), Ma (2001; 2002), Murphy (2002), Wang and Fan (2006), and Zhao (2002).

[4] De Brauw and Rozelle (2008) confirm this result on rural household data collected in 2000. They find no evidence of a relationship between migration (measured by both the number of household members in the migrant work force and the number of return migrants) and productive investment.

[5] As far as the determinants of return migration are concerned, Hare (1999) finds on a sample of 309 households collected in 1995 in a county in Henan province that pull factors related to the household's own-production labor needs are the most important determinants of how long migrant workers stay in cities before returning home. Using data from a rural household survey carried out in six provinces in 1999, Zhao (2002) finds evidence that both push and pull factors affect the return decision. Wang and Fan (2006), who examine the "selectivity" of return migrants with data collected in Sichuan and Anhui provinces in 1999 predict a positive relationship between "success returnees" (who returned for investment reason) and the length of spell in the destination area, indicating that the accumulation of migration experience is positively related to the returnees' investment purpose for return.

[6] There are particular historical reasons for this. Indeed, the county used to serve as one of the communist army bases during the war with Japan in the 1940s. Labor migration started with old generation of domestic servants who moved to Beijing with the army officials and sponsored the second generation of young female relatives to Beijing. This was so widespread that it became a popular saying that "domestic service workers in Beijing come from Anhui, and domestic service workers from Anhui are from Wuwei".

[7] Under this policy, return migrants who set up businesses can enjoy a "foreign investment" treatment. They are

offered a no-constraint rule on business scale, employment, choice of projects, etc. They are also offered favorable conditions in the usage of land, water or electricity, the payment of tax, or the granting of subsidized loans. The policy has been strongly promoted by the county government, which required local town and village leaders to develop one such enterprise each year, and annually assessed their achievements (http://news.sohu.com/20070727/n251278604.shtml).

[8] Zhao (2002) cites Wuwei County as an example of counties that have actively tried to "attract back migrant entrepreneurs". Referring to field interviews, she also notes that Wuwei County has invested in "infrastructure in order to make the local investment environment more attractive to returning entrepreneurs" (p. 377).

[9] This comparative approach has also been used by Zhao (2002), who evaluates the different occupational choices between three groups of population in rural China. On other countries, see also Martin and Radu (2009), Piracha and Vadean (2010), and Wahba and Zenou (2009).

[10] Examples of this approach can be found in both internal and international migration studies (Arif & Irfan, 1997; Ilahi, 1999; Ma, 2001; Mesnard 2004) that focus on the role of migration experience in the occupational mobility of return migrants.

[11] Yet, a limitation of a cross-section analysis is that it does not enable us to account for institutional changes that may have affected self-employment in China, such as the amendment of the constitution of the People's Republic of China in 1999 or the Law of the People's Republic of China on Promotion of Small and Medium-sized Enterprises passed in 2003.

[12] There is some empirical evidence that attests to the existence of such liquidity constraints in developed countries too. Using American data, Evans and Jovanovic (1989) show that liquidity constraint is binding for virtually all the individuals who are likely to start a business. According to their estimation, the liquidity constraint deters 1.3% of the population from entering entrepreneurship.

[13] In this respect, including the amount of return savings into the occupational choice equation is a way to test the extent to which credit constraint affects self-employment decision. The rationale is that in the absence of credit constraint, the decision to become entrepreneur would not depend on personal wealth.

[14] Although the survey was carried out at the onset of the financial crisis, when massive lay-off started in China (Huang *et al.* in press), there are good reasons to think that the 2008 economic crisis should not contaminate our results in any severe way. First, regarding return decisions, the recorded information of the year of return for return migrants indicates that only 10% of them returned in 2008, and that only one individual had a return duration of less than 2 months at the time of the survey. Second, our survey also records the starting year of

current occupation for each return migrant. About 74% of the sample started their current occupation before the year 2008. Among those who started their current occupation in 2008, half of them started before August 2008. These figures suggest that the occupational choice of return migrants in our sample has been made essentially before the start of economic recession in China.

[15] Unpaid workers (e.g. housewife) and individuals currently waiting for a job are excluded from the sample. Current out-migrants are also excluded from the sample since they are working in cities, and not in the villages.

[16] A limitation of the study is the relatively small sample size, which drastically limits the degrees of freedom in the quantitative analysis provided below. We acknowledge this limitation and this is an important point of caution in the interpretation of our results.

[17] Piracha and Vadean (2010) emphasize the relevance of distinguishing own-account workers and individual entrepreneurs in estimating the role of return migration in occupational mobility. However, our data do not allow us such a distinction because of the small number of observations per category we would be left with. Moreover, a common feature of rural work is that some individuals participate in more than one occupation at the same time. Most multiple activities involve farm labor and one off-farm activity. Among non-migrants as well as return migrants, about 23% declared having two occupations, mostly twined with farm labor. For these individuals, we categorize the off-farm occupation as the primary occupation.

[18] These findings are consistent with evidence from Zhao (2002) and Wang and Fan (2006). There is a slight difference though with Wang and Fan (2006) who found that women are more likely to return than men, which is not the case in our sample. However, this difference may simply come from the fact that our sample excludes homemakers, who are mainly females.

[19] As for education, we may also note that the overall education level of the surveyed population is low since less than 10% of them reached a senior high school level or above.

[20] One *mu* is equal to 0.067 hectare.

[21] Land endowment measures the total area of land contracted to the household (expressed in per capita terms). Since there has been only one reallocation of land in each village (in 1995) and no other reallocation since then, contracted land can be considered as reasonably exogenous to the migration decision in Wuwei County.

[22] Skilled workers are identified as people engaged in professional work, semi-skilled or skilled work, management, government position, or clerk position. Low skilled workers, apprentices, service workers as well as family cottage workers are designated as “manual workers”. Individuals who undertake traditional agricultural work are grouped as “farm laborers”.

[23] Zhang *et al.* (2006) use a sample of 1,199 households surveyed in 60 villages and six provinces in 2000.

[24] Zhang *et al.* (2006) also find that self-employed individuals in rural China are more likely to be male.

[25] Two recent papers on return migration in Egypt (Wahba & Zenou, 2009) and in Eastern Europe (Martin & Radu, 2009) follow Greene (1998)'s methodology and apply a recursive bivariate Probit model to account for the potential endogeneity of return migration in entrepreneurship decision. They both find evidence of endogeneity and show that controlling for the endogeneity of migration decision may change the estimated impact of return migration on the decision to be self-employed.

[26] The instrument's coefficient is insignificant in all the occupational choice equations reported in Table 3. The corresponding p-values for the instrument's coefficient are 0.210, 0.301 and 0.431 respectively for models (1) to (3).

[27] Simple descriptive statistics corroborate the finding that there is no clear evidence of return migrants being a self-selected group of population. Indeed, a comparison of occupational patterns of return migrants before migration with that of non-migrants does not highlight any systematic difference. Conversely, return migrants who were working before migration were actually much more engaged in farm work (69%) than non-migrants (either in their current occupation, 50% or their past occupation, 55%), and much less in self-employment (8% against 22% or 17%).

[28] Migration duration is the total accumulated years of migration.

[29] The exact question asked during the interview to each individual migrant is: "How much of your total financial savings did you bring back with you?". We use this question to calculate repatriated savings upon return. Since some couples have non-separable repatriated savings and self-employed business is mostly a family business with an overall family financial contribution, repatriated savings here are calculated as the total family members' migration savings upon return.

[30] While in cities, self-employment activities concentrate in catering business, construction, and retail business.

[31] One may argue that the effect of repatriated savings on self-employment decision could be non-linear (Mesnard, 2004). On our sample, specifications including higher order powers for savings did not show evidence of any non-linear effect.

[32] Although it cannot be considered as a measure of human capital accumulation, the frequency of job changes during migration entails an accumulation of experience through a need to adjust to new situations and the learning of new skills.

[33] A "big city" refers to a provincial capital city, one of the four municipalities (Beijing, Shanghai, Tianjin,

Chongqing) or a Special Economic Zone city like Shenzhen.

[34] One may argue that the frequency of job changes could be endogenous too if these job changes were mostly voluntary and somehow connected to the business set up upon return (meaning that migrants would indeed try many different jobs in order to have enough contacts or find a market niche for their own business later). However, this seems not to be the case in the studied area. As indicated below, we collected information on the reasons why return migrants changed jobs during migration and we found that the majority of job mobility was involuntary. Moreover, the surveyed return migrants also declared that the choice of a specific city for labor migration was usually not related upstream to any desire to set up business after return.

[35] In the first-stage equation for the IV-probit estimation, the p-values for the instruments' coefficients are 0.152, 0.113 and 0.519 respectively for age at first migration, its square and the reasons for the choice of the first migration destination. Excluding the third (non-significant) instrument from the IV estimation does not change any of the results.

[36] Mesnard (2004) also finds that the exogeneity of return savings cannot be rejected in her estimations.

[37] The lack of financial assets has been shown to be an important impediment to self-employment in a number of studies on both developed and developing countries. See for example Evans and Jovanovic (1989) and Holtz-Eakin *et al.* (1994) on the US, and Paulson and Townsend (2004) on Thailand.

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Table 1 - Descriptive statistics by migration status

	Mean value or %		*Mean test*
	Return migrants	***Non-migrants***	
Individual characteristics			
Age	39.6	47.3	***
Male	58%	50%	NS
Married	87%	87%	NS
Years of schooling	5.6	4.5	**
Education level			
Illiterate	27%	44%	***
Primary school	22%	21%	NS
Junior middle school	43%	26%	***
Senior high or more	8%	9%	NS
Relationship to the household head			
Household head	50%	42%	NS
Spouse	33%	40%	NS
Child	13%	12%	NS
Occupational distribution			
Self-employment	44%	22%	***
Farm labor	22%	50%	***
Manual work	14%	15%	NS
Skilled work	20%	13%	NS
Household characteristics			
Household size	4.05	4.23	NS
# children under 6	0.19	0.20	NS
# children in school	0.74	0.59	*
# male working adults	1.44	1.52	NS
# female working adults	1.29	1.42	NS
# old members (over 70)	0.15	0.21	NS
Land per person (*mu*)	0.72	1.07	***
Household income 2007			
Including income from migration	27,220	26,487	NS
Excluding income from migration	21,842	22,824	NS
Sample size	*86*	*298*	

Source: Wuwei 2008 Survey.

Notes: The mean test column indicates the significance level of mean differences between return migrants and non-migrants. NS non significant; * significant at 10%; ** significant at 5%; *** significant at 1%.

Some averages are calculated over a smaller number of observations because of missing values. We only report the total number for reference.

Table 2 - Descriptive statistics by migration status and by occupation

	Whole sample			Self-employment			Wage or farm work		
	Self-emp.	***Wage or farm***	***Mean test***	***NM***	***RM***	***Mean test***	***NM***	***RM***	***Mean test***
Individual characteristics									
Age	43.41	46.33	**	45.80	39.32	***	47.67	39.88	***
Male	0.62	0.48	**	0.60	0.66	NS	0.48	0.52	NS
Married	0.96	0.83	***	0.97	0.95	NS	0.84	0.81	NS
Years of schooling	5.34	4.52	*	4.85	6.18	*	4.37	5.21	NS
Education level									
Illiterate	0.32	0.43	*	0.37	0.24	NS	0.46	0.29	**
Primary school	0.17	0.22	NS	0.18	0.16	NS	0.21	0.27	NS
Junior middle school	0.43	0.25	***	0.40	0.47	NS	0.22	0.40	**
Senior high or more	0.08	0.09	NS	0.05	0.13	NS	0.10	0.04	NS
Relationship to the household head									
Household head	0.58	0.38	***	0.57	0.61	NS	0.38	0.42	NS
Spouse	0.35	0.40	NS	0.38	0.29	NS	0.41	0.35	NS
Child	0.05	0.15	***	0.03	0.08	NS	0.15	0.17	NS
Household characteristics									
Household size	3.96	4.27	*	3.92	4.03	NS	4.32	4.06	NS
# children under 6	0.16	0.21	NS	0.14	0.18	NS	0.21	0.19	NS
# children in school	0.75	0.58	**	0.63	0.95	*	0.58	0.58	NS
# male working adults	1.42	1.54	NS	1.46	1.34	NS	1.54	1.52	NS
# female working adults	1.18	1.46	***	1.22	1.13	NS	1.47	1.42	NS
# old members (over 70)	0.11	0.23	**	0.08	0.16	NS	0.25	0.15	NS
Land per person (*mu*)	0.67	1.11	***	0.72	0.58	NS	1.16	0.84	**
Household income 2007									
Including income from migration	31,020	25,039	**	31,368	30,426	NS	25,113	24,681	NS
Excluding income from migration	26,801	21,066	**	28,982	23,071	NS	21,106	20,869	NS
Sample size	103	281		65	38		233	48	

Source: Wuwei 2008 Survey.
Notes: See Table 1. NM: non-migrants. RM: return migrants.

Table 3 – Probit estimates of rural self-employment choice

Determinants of P(self-employed)	(1)		(2)		(3)	
	Marginal effect	*Robust S. E.*	*Marginal effect*	*Robust S. E.*	*Marginal effect*	*Robust S. E.*
Individual characteristics						
Return migrant (=1)	0.099*	0.191	0.109*	0.193	0.124**	0.196
Age (years)	0.046***	0.060	0.049**	0.068	0.053***	0.071
Age squared	-0.001***	0.001	-0.001***	0.001	-0.001***	0.001
Male (=1)	0.133***	0.150	0.105**	0.155	0.90**	0.160
Married (=1)	0.150*	0.396	0.140	0.408	0.112	0.398
Education (years)	0.001	0.027	0.004	0.027	0.003	0.028
Household characteristics						
Household size	-0.055***	0.073				
# children under 6			-0.080	0.241	-0.097	0.253
# male working adults			0.012	0.156	-0.025	0.168
# female working adults			-0.071**	0.126	-0.094***	0.125
# old members (over 70)			-0.131**	0.210	-0.118**	0.209
Land per person (*mu*)	-0.111**	0.161	-0.096**	0.157	-0.104**	0.155
Household income 2007					0.004***	0.005
Township characteristics						
Gaogou town (=1)	-0.109*	0.235	-0.105*	0.237	-0.152**	0.245
Dougou town (=1)	-0.112*	0.269	-0.123*	0.267	-0.132**	0.263
Tanggou town (=1)	-0.107	0.283	-0.094	0.297	-0.101	0.289
Sample size	384		384		382	
Predicted Prob (at X bar)	20%		20%		19%	
Observed frequency	27%		27%		27%	
Pseudo R^2	0.21		0.22		0.24	
Log pseudolikelihood	-177.06		-175.12		-169.02	

Source: Wuwei 2008 Survey.

Notes: Household income for the year 2007 includes remittances from on-going migrants and is expressed in 1,000 yuan. Marginal effects measure the change in the probability of being self-employed from a unit change in the explanatory variable. Robust standard errors are adjusted for clustering by households (201 households). *: Significant at 10%. **: significant at 5%. ***: significant at 1%.

Table 4 – Recursive bivariate probit estimates of being a return migrant and self-employment choice

Variables	***(1)***		***(2)***		***(3)***	
	Coef.	*Z-stat.*	*Coef.*	*Z-stat.*	*Coef.*	*Z-stat.*
Probability of being self-employed						
Individual characteristics						
Return migrant (=1)	1.231***	2.65	1.336***	2.78	1.357***	2.84
Age (years)	0.144**	2.43	0.150**	2.20	0.170**	2.46
Age squared	-0.002**	-2.57	-0.002**	-2.23	-0.002**	-2.40
Male (=1)	0.346**	2.04	0.249	1.41	0.205	1.17
Married (=1)	0.505	1.25	0.453	1.08	0.321	0.80
Education (years)	0.008	0.31	0.017	0.66	0.013	0.49
Household characteristics						
Household size	-0.151**	-2.13				
# children under 6			-0.263	-1.17	-0.320	-1.36
# male working adults			0.062	0.40	-0.068	-0.40
# female working adults			-0.221*	-1.94	-0.304***	-2.74
# old members (over 70)			-0.359*	-1.72	-0.329	-1.62
Land per person (*mu*)	-0.300**	-1.98	-0.258*	-1.79	-0.295**	-2.03
Household income 2007					0.015***	3.41
Township characteristics						
Gaogou town (=1)	-0.323	-1.46	-0.314	-1.44	-0.512**	-2.23
Dougou town (=1)	-0.431*	-1.77	-0.477**	-1.99	-0.530**	-2.23
Tanggou town (=1)	-0.392	-1.51	-0.346	-1.30	-0.387	-1.47
Constant	-3.194***	-2.62	-3.761***	-2.76	-4.217***	-3.05
Probability of being a return migrant						
Individual characteristics						
Age (years)	0.143**	2.50	0.158***	2.62	0.161***	2.71
Age squared	-0.002***	-3.49	-0.002***	-3.51	-0.002***	-3.63
Male(=1)	0.345**	2.12	0.317*	1.83	0.329*	1.92
Married(=1)	0.050	0.11	-0.055	-0.12	-0.047	-0.10
Education (years)	-0.005	-0.20	-0.003	-0.12	-0.002	-0.08
Household characteristics						
Household size	-0.097	-1.33				
# children under 6			0.049	0.23	0.072	0.33
# male working adults			0.006	0.04	0.034	0.22
# female working adults			-0.033	-0.25	-0.018	-0.14
# old members (over 70)			-0.106	-0.52	-0.124	-0.62
Land per person (*mu*)	-0.278*	-1.68	-0.264	-1.59	-0.264	-1.57
Household income 2007					-0.003	-0.68
Instrument						
Share of return migrants and migrants in the village	4.328**	2.37	4.143**	2.26	3.786**	2.09
Constant	-3.589***	-2.99	-4.138***	-3.52	-4.042***	-3.36
Rho (ρ)	-0.560		-0.609		-0.590	
Wald test of ρ=0 (p-value)	0.12		0.12		0.16	
Sample size	384		384		382	
Log pseudolikelihood	-346.29		-345.16		-338.79	

Source: Wuwei 2008 Survey.
Notes: see Table 3.

Table 5 – Transition matrix for pre-migration and post-return occupation of returnees

Pre-migration occupation	**Post-return occupation**				
	Farm laborer	*Manual worker*	*Skilled worker*	*Self-employed*	**Total**
Farm laborer	18 (94.74%)	5 (41.67%)	4 (23.53%)	17 (44.74%)	44 (51.16%)
Manual worker	0 (0.00%)	1 (8.33%)	2 (11.76%)	4 (10.53%)	7 (8.14%)
Skilled worker	0 (0.00%)	3 (25.00%)	4 (23.53%)	1 (2.63%)	8 (9.30%)
Self-employed	0 (0.00%)	0 (0.00%)	2 (11.76%)	3 (7.89%)	5 (5.81%)
Unemployed	1 (5.26%)	3 (25.00%)	5 (29.41%)	13 (34.21%)	22 (25.58%)
Total	19 (22.09%)	12 (13.95%)	17 (19.77%)	38 (44.19%)	86 (100%)

Source: Wuwei 2008 Survey.
Note: Unemployed individuals before migration were students, homemakers or waiting for a job.

Table 6 – Return migrants' migration experience by occupational choice upon return

	All	Self-employed	Non self-employed	*Mean test*
Migration experience				
Age at first migration	26.49	24.66	27.94	*
	(8.56)	(7.13)	(9.36)	
First migration destination choice for a	0.67	0.68	0.67	NS
"social network" reason	(0.47)	(0.47)	(0.48)	
Migration in or after the year 1996	0.55	0.42	0.65	**
	(0.50)	(0.50)	(0.48)	
Number of years of migration	6.46	7.55	5.60	*
	(5.43)	(5.05)	(5.63)	
Occupational distribution during migration				
Manual work	34.52%	21.62%	44.68%	***
Skilled work	39.29%	48.65%	31.91%	*
Self-employment	26.19%	29.73%	23.40%	NS
Number of job changes	1.56	1.84	1.33	***
	(0.79)	(0.92)	(0.60)	
Worked in a big city during migration	0.59	0.61	0.58	NS
	(0.49)	(0. 50)	(0.50)	
Number of city changes	1.88	2.03	1.77	NS
	(1.81)	(2.03)	(1.62)	
Repatriated savings (yuan)	11,957	16,263	8,548	**
	(14,582)	(17,243)	(11,118)	
Post-return experience				
Number of years since return	5.12	5.71	4.64	NS
	(4.71)	(4.69)	(4.72)	
Number of job changes upon return	1.28	1.42	1.17	**
	(0.55)	(0.68)	(0.38)	
Age at return	34.49	33.53	35.25	NS
	(9.71)	(7.98)	(10.91)	
Sample size	86	38	48	

Source: Wuwei 2008 Survey.

Note: Standard deviation in parenthesis. The mean test column indicates the significance level of mean differences between self-employed and non self-employed. NS non significant; * significant at 10%; ** significant at 5%; *** significant at 1%.

Table 7 – Marginal effects for the probability of return migrants to be self-employed

Determinants of P(self-employed)	Standard Probit model		IV Probit model	
	(1)	(2)	(3)	(4)
Individual characteristics				
Age (years)	0.096	0.079	0.093	0.019
	(1.62)	(1.33)	(1.25)	(0.29)
Age squared	-0.001*	-0.001	-0.001	-0.000
	(-1.91)	(-1.56)	(-1.42)	(-0.39)
Male (=1)	0.177	0.125	0.181	0.169*
	(1.28)	(0.93)	(1.15)	(1.66)
Married (=1)	0.079	0.275	0.064	0.009
	(0.29)	(1.02)	(0.16)	(0.02)
Education (years)	0.004	0.011	0.002	-0.023
	(0.18)	(0.51)	(0.05)	(-0.77)
Household characteristics				
Household size	-0.085		-0.087	
	(-1.21)		(-1.18)	
# children under 6		-0.389*		-0.273
		(-1.85)		(-0.83)
# male working adults		0.135		-0.025
		(0.96)		(-0.13)
# female working adults		-0.280		-0.067
		(-1.44)		(-0.23)
# old members (over 70)		-0.179		-0.315*
		(-0.97)		(-1.83)
Land per person (*mu*)	-0.120	-0.169	-0.111	-0.017
	(-0.84)	(-1.23)	(-0.50)	(-0.09)
Migration experience				
# job changes during migration	0.292***	0.351***	0.293***	0.266
	(2.90)	(3.37)	(2.89)	(1.27)
Repatriated savings (1,000 yuan)	0.015**	0.017**	0.017	0.035***
	(2.0)	(2.32)	(0.50)	(4.26)
Worked in a big city during migration (=1)	0.021	0.097	0.012	-0.034
	(0.14)	(0.59)	(0.0.6)	(-0.24)
Return duration (years)	0.024	0.014	0.024	0.013
	(1.35)	(0.73)	(1.29)	(0.76)
Township characteristics				
Gaogou town (=1)	-0.461**	-0.506**	-0.458**	-0.273
	(-2.47)	(-2.37)	(-2.15)	(-0.66)
Dougou town (=1)	-0.588***	-0.640***	-0.589***	-0.547
	(-3.80)	(-3.71)	(-3.78)	(-1.22)
Tanggou town (=1)	-0.428**	-0.409**	-0.430**	-0.278
	(-2.55)	(-2.11)	(-2.59)	(-0.91)
Sample size	86	86	86	86
Pseudo R^2	0.3482	0.3946		
Overidentification test: Amemiya-Lee-Newey minimum chi-sq (p-value)			0.9828	0.9044
Wald test of exogeneity (p-value)			0.9557	0.3689

Source: Wuwei 2008 Survey.

Notes:

1. Marginal probabilities are obtained from Maximum likelihood estimates. Robust standard errors are adjusted for clustering by households (61 households). Z-stat are reported in parenthesis.
2. *: Significant at 10%. **: significant at 5%. ***: significant at 1%.
3. Instruments for repatriated savings are 'age at first migration', its square and 'social network as a main reason for the choice of the first migration'. The Ameniya-Lee-Newey test results for overidentification of instruments are obtained using Baum *et al.* (2006) overid.ado programme for Stata after estimation by Newey's minimum chi-squared estimator.